THAT CLAIMED IS:

1. An apparatus adapted to accommodate stress forces with substantially reduced internal deformation while providing a conductive path between a rotor coil and a radial stud in a power generator, the apparatus comprising;

a power generator stator core;

a rotor shaft positioned to rotate within the stator core and having an axial lead extending axially through a portion of the rotor shaft to provide a conductive path therethrough;

at least one rotor coil associated with the rotor shaft to provide a conductive path for induced electrical current;

a radial stud extending radially into the rotor shaft and connecting to the axial lead to carry current between the rotor coil and the axial lead; and

a sectioned conductor comprising a first sectioned member connected to the radical stud and a second sectioned member electrically connected to the at least one rotor coil, the second sectioned member also being electrically connected to the first sectioned member and adapted to remain electrically connected thereto when moving relative to the first sectioned member in response to stress forces.

2. An apparatus as defined in Claim 1, wherein the first and second sectioned members of the sectioned conductor are spaced apart from each other.

3. An apparatus as defined in Claim 2, wherein the first sectioned member and the second sectioned member of

the sectioned conductor are electrically connected to each other by at least one elastic conductor, the conductor being able to accommodate stress forces by compressing and stretching in response thereto and to readily resume a preselected shape when not subject to stress forces.

4. An apparatus as defined in Claim 3, wherein the first sectioned member and the second sectioned member of the sectioned conductor are electrically connected by at least one spring, the at least one spring being formed of an electrically conductive material.

5. An apparatus as defined in Claim 4, wherein the first sectioned member and the second sectioned member of the sectioned conductor are each formed of a material having low ohmic resistance to thereby reduce current-induced temperature effects in the sectioned conductor when the sectioned conductor conducts electric current between the radial stud and the at least one rotor coil.

6. An apparatus as defined in Claim 1, wherein the first sectioned member of the sectioned conductor comprises an axial portion connected to the radial stud and a radial portion extending outwardly from the axial portion in a radial direction relative to the lengthwise extent of the rotor shaft, and wherein the second sectioned member of the sectioned conductor comprises a first end connected to the at least one rotor coil and a second end into which a bore extends thereby defining a substantially hollow conductor channel having at least three sides to at least partially receive therein the axial portion of the first sectioned member.

7. An apparatus as defined in Claim 6, wherein the radial portion of the first sectioned member of the sectioned conductor is electrically connected to the second sectioned member of the sectioned conductor by at least one strip spring having a first connection connected to a surface of the conductor channel into which the radial portion of the first member at least partially extends and having a second opposing connection connected to the radial portion of the first sectioned member of the sectioned conductor.

8. An apparatus as defined in Claim 7, wherein the first sectioned member of the sectioned conductor and the second sectioned member of the sectioned conductor are each formed of a material having low ohmic resistance to thereby reduce current-induced temperature effects in the sectioned conductor when the sectioned conductor conducts electrical current between the radial stud and the at least one rotor coil.

9. An apparatus as defined in Claim 8, wherein the apparatus further comprises a structural support having a first end connected to the first sectioned member of the sectioned conductor and a second end connected to the rotor to which the sectioned conductor is connected to thereby provide mechanical support to the sectioned conductor.

10. An apparatus as defined in Claim 9, wherein the conductor channel of the second sectioned member of the sectioned conductor is an open channel having three sides thereby defining a groove extending radially within in the second sectioned member of the sectioned conductor

relative to the rotor shaft and positioned to permit the first end of the support structure to extend into the groove to connect to the radial portion of the first sectioned member of the elastic conductor extending into the groove and to permit the second sectioned member to move relative to first sectioned member freely and unobstructed by the first end of the support structure in response to stress forces.

11. A sectioned conductor adapted to accommodate stress forces with substantially reduced internal deformation while providing a conductive path between a rotor coil and a radial stud in a power generator, the sectioned conductor comprising:

a first sectioned member connected to the radial stud; and

a second sectioned member electrically connected to the first sectioned member and adapted to remain electrically connected thereto when moving relative to the first sectioned member in response to stress forces to thereby reduce internal deformation of the sectioned conductor.

12. An apparatus as defined in Claim 11, wherein the first and second sectioned members of the sectioned conductor are spaced apart from each other.

13. An apparatus as defined in Claim 12, wherein the first sectioned member and the second sectioned member of the sectioned conductor are electrically connected to each other by at least one elastic conductor, the conductor being able to accommodate stress forces by compressing and

stretching in response thereto and to readily resume a preselected shape when not subject to stress forces.

14. An apparatus as defined in Claim 13, wherein the first sectioned member and the second sectioned member of the sectioned conductor are electrically connected by at least one spring, the at least one spring being formed of an electrically conductive material.

15. An apparatus as defined in Claim 14, wherein the first sectioned member and the second sectioned member of the sectioned conductor are each formed of a material having low ohmic resistance to thereby reduce current-induced temperature effects in the sectioned conductor when the sectioned conductor conducts electric current between the radial stud and the at least one rotor coil.

16. A sectioned conductor as defined in Claim 11, wherein the first sectioned member comprises an axial portion adapted to be connected to the rotor shaft and to the radial stud extending into the rotor shaft and a radial portion extending outwardly from the axial portion in a radial direction relative to the lengthwise extent of the rotor shaft, and wherein the second sectioned member comprises a first end adapted to be connected to the at least one rotor coil and a second end through which a bore extends thereby defining a substantially hollow conductor channel having at least three sides to at least partially receive therein the axial portion of the first sectioned member.

17. A sectioned conductor as defined in Claim 16, wherein the radial portion of the first sectioned member is electrically connected to the second sectioned member by at least one strip spring having a first connection connected to a surface of the conductor channel into which the radial portion of the first member at least partially extends and having a second opposing connection connected to the radial portion of the first sectioned member of the elastic conductor.

18. A sectioned conductor as defined in Claim 17, wherein the first sectioned member and the second sectioned member are each formed of a material having low ohmic resistance to thereby reduce current-induced temperature effects in the sectioned conductor when the sectioned conductor conducts electrical current between the radial stud and the at least one rotor coil.

19. A sectioned conductor as defined in Claim 18, wherein the sectioned conductor further comprises a structural support having a first end connected to the first sectioned member of the sectioned conductor and a second end connected to the rotor to which the first sectioned member of the sectioned conductor is connected to thereby provide enhanced mechanical support to the sectioned conductor.

20. A sectioned conductor as defined in Claim 19, wherein the sectioned conductor further comprises an open groove extending through a portion of the second sectioned of the sectioned conductor, a portion of the first sectioned member of the sectioned conductor extending into the groove and being electrically connected to a surface

portion of the groove and the first end of the structural support extending in to the groove and fixedly connecting to the portion of the first sectioned member positioned therein such that the second sectioned member is able to move relative to first section freely and unobstructed by the first end of the support structure in response to stress forces.

21. A method for accommodating stress forces on an electrical connection providing a conductive path between at least two spaced-apart electrical components within a generator, the method comprising the steps of:

positioning a first portion of a conductor to electrically connect the first portion to a first component of the at least two electrical components;

positioning a second portion of the conductor to electrically connect the second portion to a second component of the at least two electrical components and to move relative to the first portion in response to stress forces to thereby substantially avoid internal deformation of the conductor while remaining electrically connected to the first portion.

22. A method as defined in Claim 21, wherein the method further comprises the step of electrically connecting the first portion of the conductor to the second portion of the conductor by positioning at least one electrically conductive slip spring between the first portion and the second portion of the conductor thereby providing a conductive path via the at least one slip spring.

23. A method as defined in Claim 22, wherein the method further comprises the step of reducing current-induced temperature effects in the conductor by forming the first portion of a material having a low ohmic resistance and forming the second portion of a material also having a low ohmic resistance.

24. A method as defined in Claim 23, wherein the method further comprises providing enhanced structural support to the conductor by positioning a support structure on a third component of the generator and connecting the support structure to the first portion of the conductor.